

ASH GROVE CEMENT COMPANY



"WESTERN REGION"

September 30, 1996

Mr. Fred Austin
Puget Sound Air Pollution Control Agency
110 Union Street, Suite 500
Seattle Washington 98101-2038

Dear Mr. Austin;

Enclosed is a Notice of Construction application to modify Appendix A of PSAPCA NOC # 5730 dated December 29, 1994. Appendix A defines startup, shutdown and scheduled maintenance conditions under which alternate start up limits apply.

Please call should you have any questions.

Yours truly

Gerald J. Brown
Manager, Safety and Environmental

cc: HV
NF
DH

AGCS2M002220

PUGET SOUND AIR POLLUTION CONTROL AGENCY
 Engineering Division ■ 110 Union Street, Room 500 ■ Seattle, Washington 98101-2038 ■ (206) 689-4052
NOTICE of CONSTRUCTION & APPLICATION for APPROVAL

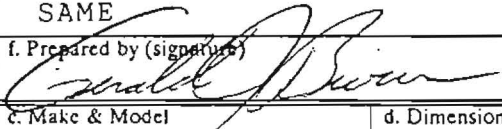
FOR AIR POLLUTION CONTROL EQUIPMENT ONLY

FORM R

For Agency Use:

Date: _____ N/C# _____

***Note: Information required by Section 1a must be completed for this form to be accepted for review.**

1	a. Complete the Sections Indicated* <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12						b. Company (or owner) Installation Address ASH GROVE CEMENT COMPANY	
	c. Company (or owner) Name ASH GROVE CEMENT COMPANY						d. Applicant SAME	
	e. Prepared by (name and title) Gerald J. Brown						f. Prepared by (signature) 	
							g. Phone 623-5596	
2	a. AIR POLLUTION CONTROL EQUIPMENT		b. Type of Equipment		c. Make & Model		d. Dimensions (LxWxH)	
	e. Number of Units		f. Capacity		g. Auxiliary Equipment		h. Connected to:	
3	a. BAGHOUSE		b. Number of Bags		c. Shaking Cycle (auto or manual rapping or reverse air)		d. Cloth Area	
	e. Material Used		f.		g. Air-to-Cloth Ratio (ft/minute)		h. Connected to:	
4	a. ELECTROSTATIC PRECIP.		b. Electrode Separation (ft)		c. Coll. Electrode Dimensions LxW (ft)		d. Mean Velocity of Gas (ft/sec)	
	e. Area (sq ft)		f. Voltage		g. Coll. Electrode or Plate Area (sq ft)		h. Connected to:	
5	a. BURNERS		b. Type of Burner, Fuel		c. Make & Model		d. Rating	
	e. Number of Units; Ignition		f.		g. CFM Exhausted (Temperature) _____ (____ °F)		h. Connected to:	
6	a. STACKS, VENTS		b. Type of Vent		c. Dimensions (LxWxH)		d. Dampers	
	e. No. of Vents; Material Used		f.		g. CFM Exhausted (Temperature) _____ (____ °F)		h. Connected to:	
7	a. SCRUBBERS		b. Type of Flow (spray, bubbler)		c. Packing Type/Size		d. Pressure Drop (inches of water)	
	e. Composition of Solution		f.		g. Flow Rate (GPM)		h. Make-Up (GPM)	
8	a. FANS		b. Type of Fan (designate blade)		c. Make & Model		d. Motor Data _____ RPM _____ HP	
	e. Number of Fans; Material Used		f.		g. CFM Exhausted (Temp @ SP) _____ (____ °F)		h. Connected to:	
9	a. CYCLONES		b. Type of Cyclone <input type="checkbox"/> Common <input type="checkbox"/> Split Duct <input type="checkbox"/> Multiclone		c. Make & Model		d. Inlet Area (sq ft)	
	e. Number of Units; Material Used		f. Body Dia. (in.) Outlet Dia. (in.)		g. Body Height (in.) Efficiency		h. Connected to:	
10	a. COLLECTION DATA		b. Description of Collected Matl.		c. Amount Collected (lbs/day)		d. Particle Size (microns avg.)	
	e. Types of Pollutants <input type="checkbox"/> Gas <input type="checkbox"/> Particulate <input type="checkbox"/> Odor		f.		g. Collection Efficiency		h. Disposition of Collection Waste	
11	a. GAS FLOW		b. Actual CFM		c. SCFM (Reg I Standard)		d. Temperature (°F) In _____ Out _____	
	e. Pressure Drop		f. Efficiency		g. Inlet and Outlet Pollutant Concentrations		h.	
12	a. ADDITIONAL DATA		b. <input type="checkbox"/> Attach Brochure		c. <input type="checkbox"/> Attach Plans/Specs		d. <input type="checkbox"/> Attach Emission Estimate (show calculation)	
	e. <input type="checkbox"/> Submit Narrative Description of Process		f. <input type="checkbox"/> Submit Source Test Data		g. <input type="checkbox"/> Submit Modeling Data		h. <input type="checkbox"/> Attach Schedule of Equipment with Make, Model, Capacity	
	i. <input type="checkbox"/>		j. <input type="checkbox"/>		k. <input type="checkbox"/>		l. <input type="checkbox"/>	



PUGET SOUND AIR POLLUTION CONTROL AGENCY

ENGINEERING DIVISION

110 Union Street, Suite 500 • Seattle, WA 98101-2035

Telephone: (206) 689-4052

Notice of Construction and Application for Approval

FORM P
SIDE 1

Be sure to complete items 39, 40, 41, & 43 before submitting Form P.

(AGENCY USE ONLY)

DATE _____ N/C NUMBER _____
REG. NO. _____ VAR. NO. _____
SIC. NO. _____ COS. NO. _____
GRID NO. _____ UTM _____

1. TYPE OF BUILDING (Check) <input type="checkbox"/> New <input type="checkbox"/> Existing	2. STATUS OF EQUIPMENT (Check) <input type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Altered <input type="checkbox"/> Relocation	7. APPLICANT SAME
3. COMPANY (OR OWNER) NAME ASH GROVE CEMENT COMPANY		8. APPLICANT ADDRESS SAME
4. COMPANY (OR OWNER) MAILING ADDRESS 3801 East Marginal Way South, Seattle		9. INSTALLATION ADDRESS SAME
5. NATURE OF BUSINESS Cement Manuf. 98134		10. TYPE OF PROCESS

EQUIPMENT (ENTER ONLY NEW EQUIPMENT OR CHANGES. ENTER NUMBER OF UNITS OF EQUIPMENT IN COLUMN 'NO. OF UNITS.' COMPLETE FORM 'S' FOR EACH ENTRY.)

11. NO. OF UNITS	SPACE HEATERS OR BOILERS (Complete Form S-A)	14. NO. OF UNITS	OVENS	15. NO. OF UNITS	MECHANICAL EQUIP.	16. NO. OF UNITS	MELTING FURNACES
(a) _____		(a) _____	CORE BAKING OVEN	(a) _____	AREAS	(a) _____	POT
12. NO. OF UNITS	INCINERATORS (Complete Form S-B)	(b) _____	PAINT BAKING	(b) _____	BULK CONVEYOR	(b) _____	REVERBERATORY
		(c) _____	PLASTIC CURING	(c) _____	CLASSIFIER	(c) _____	ELECTRIC INOCUL/RESIST
(b) _____		(d) _____	LITHO COATING OVEN	(d) _____	STORAGE BIN	(d) _____	CRUCIBLE
13. NO. OF UNITS	OTHER SYSTEMS	(e) _____	DRYER	(e) _____	BAGGING	(e) _____	CUPOLA
		(f) _____	ROASTER	(f) _____	OUTSIDE BULK STORAGE	(f) _____	ELECTRIC ARC
(a) _____	DEGREASING, SOLVENT	(g) _____	KILN	(g) _____	LOADING OR UNLOADING	(g) _____	SWEAT
(b) _____	ABRASIVE BLASTING	(h) _____	HEAT-TREATING	(h) _____	BATCHING	(h) _____	OTHER METALLIC
(c) _____	OTHER — SYSTEM	(i) _____	OTHER	(i) _____	MIXER (SOLID)	(i) _____	GLASS
(d) _____		(j) _____		(j) _____	OTHER	(j) _____	OTHER NON METALLIC
17. NO. OF UNITS	GENERAL OPER. EQUIP.	17. NO. OF UNITS	GENERAL OPER. EQUIP.	17. NO. OF UNITS	GENERAL OPER. EQUIP.	18. NO. OF UNITS	OTHER EQUIPMENT
(a) _____	CHEMICAL MILLING	(f) _____	GALVANIZING	(k) _____	ASPHALT BLOWING	(a) _____	SPRAY PAINTING GUN
(b) _____	PLATING	(g) _____	IMPREGNATING	(l) _____	CHEMICAL COATING	(b) _____	SPRAY BOOTH OR ROOM
(c) _____	DIGESTER	(h) _____	MIXING OR FORMULATING	(m) _____	COFFEE ROASTER	(c) _____	FLOW COATING
(d) _____	DRY CLEANING	(i) _____	REACTOR	(n) _____	SAWS & PLANERS	(d) _____	FIBERGLASSING
(e) _____	FORMING OR MOLDING	(j) _____	STILL	(o) _____	STORAGE TANK	(e) _____	OTHER

CONTROL DEVICES (ENTER NUMBER OF UNITS OF EQUIPMENT IN SPACES IN COLUMNS. COMPLETE A FORM R FOR EACH ENTRY.)

19. NO. OF UNITS	CONTROL DEVICE	20. NO. OF UNITS	CONTROL DEVICE	21. NO. OF UNITS	CONTROL DEVICE	22. NO. OF UNITS	CONTROL DEVICE
(a) _____	SPRAY CURTAIN	(a) _____	AIR WASHER	(a) _____	ABSORBER	(a) _____	DEMISTER
(b) _____	CYCLONE	(b) _____	WET COLLECTOR	(b) _____	AOSORBER	(b) _____	BAGHOUSE
(c) _____	MULTIPLE CYCLONE	(c) _____	VENTURI SCRUBBER	(c) _____	FILTER PADS	(c) _____	ELEC. PRECIPITATOR
(d) _____	INERTIAL COLL. — OTHER	(d) _____		(d) _____	AFTERBURNER	(d) _____	OTHER

23. BASIC EQUIPMENT COST (Estimate)	24. CONTROL EQUIPMENT COST (Estimate)	25. DAILY HOURS FROM _____ AM to _____ PM	26. DAYS OF OPERATION (Circle) S M T W T F S
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27. ESTIMATED STARTING DATE OF CONSTRUCTION:	28. ESTIMATED COMPLETION DATE OF CONSTRUCTION:
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29. RAW MATERIALS (List starting material used in process) AND FUELS (Type and amount)	ANNUAL AMT. UNITS	30. PRODUCTS (List End Products)	ANNUAL PROD UNITS

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Notice of Construction Application

FORM P

STACKS OR VENTS (LIST NUMBER, TYPE, AND SIZE OF VENT)

31. NO. OF UNITS	DESCRIPTION OF OPENING	32. HEIGHT ABOVE GRADE (FT.)	33. VOLUME EXHAUSTED (ACFM)	DIMENSIONS (INCHES)	
				34. LENGTH (OR DIAM)	35. WIDTH
(a)	STACKS				
(b)	FLUES				
(c)	PROCESS OR GENERAL EXHAUST				
(d)	PROCESS OR GENERAL VENTS				
(e)	SKYLIGHT OR WINDOW				
(f)	EXHAUST HOOD				
(g)	OTHER				

FLOW DIAGRAM

36. FLOW DIAGRAM INSTRUCTIONS:

- FLOW DIAGRAM MAY BE SCHEMATIC. ALL EQUIPMENT SHOULD BE SHOWN WITH EXISTING EQUIPMENT SO INDICATED.
- SHOW FLOW DIAGRAM OF PROCESS STARTING WITH RAW MATERIALS USED AND ENDING WITH FINISHED PRODUCT.
- IF MORE THAN ONE PROCESS IS INVOLVED TO MAKE FINISHED PRODUCT, SHOW EACH PROCESS AND WHERE THEY MERGE.
- INDICATE ALL POINTS IN PROCESS WHERE GASEOUS OR PARTICULATE POLLUTANTS ARE EMITTED.
- FLOW CHART CAN BE ATTACHED SEPARATELY IF NECESSARY. (DRAWINGS MAY BE SUBMITTED INSTEAD IF DESIRED).
- SHOW PICKUP AND DISCHARGE POINTS FOR HANDLING OR CONVEYING EQUIPMENT.

SEE NARRATIVE

37. LIST OF ATTACHMENTS AND ACCOMPANYING DATA OR COMMENTS:

Narrative
Appendix A (Revised)
List of Revisions

38. CERTIFICATION:

I, THE UNDERSIGNED, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED IN THIS APPLICATION AND THE ACCOMPANYING FORMS, PLANS, AND SUPPLEMENTAL DATA DESCRIBED HEREIN IS, TO THE BEST OF MY KNOWLEDGE, ACCURATE AND COMPLETE.

39. SIGNATURE

41. TYPE OR PRINT NAME

40. DATE

42. TITLE

43. PHONE

Gerald J. Brown

Manager, Safety & Enviro

623-5596

AGCS2M002223

SEA0626

Narrative

Appendix A - PSAPCA NOC # 5730

This Notice of Construction application seeks to revise Appendix A to PSAPCA Order No. 5730 dated December 29, 1994. Appendix A defines procedures for startup, shutdown and scheduled maintenance. Under the revised Appendix A, continuous monitoring of SO₂ would commence when feed is first added to the kiln.

SO₂ emissions occurring during the kiln preheat are unavoidable. Since it is impossible to completely empty the kiln of material at shut down, sulphur resident in the material may be released into the airstream during the last few hours of the heat up phase of restarting the kiln. Occasionally, enough sulfur is present to generate concentrations which could exceed the specified limit. SO₂ concentrations cannot be controlled during the heat up period as there is typically only minimal airflow through the system. This low flow is necessary to protect refractory, preheater vessels and the baghouse from being damaged by heat. During this period, airflow translates to duct velocities of about 800 ft/min which is well under the 2500 ft/min required to suspend the dry sorbent in the airstream. The introduction of sorbent at such low air velocity would result in material buildup in the duct work and damage to the fans. However, once the feed of raw materials to the kiln has begun, fan speed are increased and sorbent can be added to the system as needed to scrub sulfur released from the material.

Based upon a review of cold startups for the last nine months, we have seen peaks in SO₂ emissions of 210 ppmc to 294 ppmc for the heat up phase of the starts. These occur during the last few hours of the heat up immediately before feed is put on. At this time, the kiln has been hot enough to start to "roast" the SO₂ out of the feed left from the shutdown. Typically during this portion of the heat up, we are running 1/5 to 1/4 of the normal air flows through the kiln system. Under normal operating conditions, a concentration level of 200 ppmc would correspond to a mass emission level of 235 lb/hr. However, over the last nine months of monitoring, for all the preheat concentration levels over 200 ppmc, the mass emissions have ranged between 21 lb/hr. and 63 lb/hr.

Narrative

Page 2

Kiln preheat is the thermal conditioning of the kiln system and occurs in preparation for the start up of the cement manufacturing process. Under Appendix A, heat addition is controlled to a rate consistent with good operating practices and proper conditioning of the kiln. In the revised Appendix A (attached) normal preheating of the kiln will follow the 24 hour preheat schedule guidelines but in order to accommodate other than normal operating requirements and conditions, accelerated and extended preheats should be allowed.

It has been our experience that control of SO₂ emissions during kiln startup is only possible when operating conditions allow sorbent to be introduced into the kiln system. These startup operating conditions occur only after raw feed is added into the kiln system. To demonstrate compliance with the start up emission limits specified in Condition 7 of the order, CEM data acquisition for SO₂ should begin at the point in process startup when it is possible to affect control of SO₂ concentrations.

Appendix A (Revised)

Kiln Preheat, Start Up/Shutdown and Maintenance Procedures

KILN STARTUP - KILN PREHEAT

1. Start main baghouse.
2. Follow the designated preheating chart that provide guidelines for increasing kiln temperature, decreasing oxygen and for kiln rotation.
3. Adjust the air flow and fuels to increase stage 5 temperature and a decrease kiln inlet oxygen per preheat guidelines.

KILN STARTUP - FEED ADDITION

1. When kiln is prepared for feed per the schedule, start kiln main drive and assure the ID Fan is running at the appropriate speed.
2. After kiln is on main drive, start kiln feed at 75 tons per hour with sorbent added as necessary to control sulfur dioxide emissions to below permit level.
3. Begin CEMS data acquisition for SO₂.
4. As permitted by the temperature of the material stream, increase feed rate and adjust the draft and the fuel accordingly to achieve normal production levels
5. Estimated startup time: 24 hours following a successful feeding of the kiln (#2)

KILN SHUT DOWN

1. Stop feed, shut off fuel and reduce draft. For an emergency shut down, retain as much heat as possible in the kiln to ease restart after the cause is corrected.
2. The kiln is rotated per a schedule to prevent thermal warpage of the kiln shell and shock to the refractory that could cause failure of either. During these rotations feed material inside the kiln is discharged. All turns are to be made on auxiliary drive and should be approximately 100 degrees of rotation.
3. Cooling air flow is adjusted after the fire is taken off the kiln. The temperature must be decreased in a manner consistent with the protection of the kiln system and refractories.
4. If a situation such as a critical position is made or heavy rains begin, the kiln may be rotated continuously until the situation clears.
5. The main bag house will remain in operation.
6. The cool down is required before entry is made into the kiln.

MAIN BAGHOUSE MAINTENANCE PROCEDURES

Monitoring Performance

1. Main Baghouse temperatures and pressures are continuously monitored by the control room while performance is checked by an opacity monitor on the kiln stack.
2. Conditions of the baghouse components are inspected routinely to prevent failures occurring during operation.

Trouble shooting

1. Efforts to repair deficiencies will begin immediately upon detection.
2. Once a problem is identified and located, individual cell(s) containing the defective equipment can be isolated for repairs without shutting down the entire baghouse.
3. Bag House inlet and blow back dampers are closed and secured to isolate the cell(s) containing the problem.
4. Cell(s) doors are opened and the cell is allowed to cool for safe entry.
5. Once the repairs are completed, the cell(s) is returned to operation.

Appendix A Revised

List of Revisions

Kiln Start up - Preheat

2. For normal preheating of the kiln the 24 hour preheat schedule guidelines will be followed but in order to accommodate other than normal operating requirements and conditions, accelerated 12 - 18 hours duration and extended preheats approximately 36 hours duration may be used when necessary. The accelerated schedule would be used to shorten the time required to heat the kiln in preparation of process start up. The extended schedule would be used as needed for specific purposes for example when it is necessary to slow cure new refractory.
3. This includes and revises 3 and 4 of the old text to reflect that the necessary air flow through the kiln can be adjusted by means other than the ID fan and damper to match the preheat schedule guidelines.

Kiln Start up - Feed Addition

1. This revises 1 the old text by adding "assure the ID fan is running" because there are alternate methods of providing the necessary air flow through the kiln and confirmation of the run status is needed prior to adding feed.
The wording "start kiln on .9 revolutions per minute" is deleted from the new text because the condition of the shutdown would dictate the initial kiln rotation speed. Depending on conditions, the .9 rotation speed may not or may not be appropriate.
2. This item is combines 2 and 4 of the old text.
3. This addition reflects that CEMS data acquisition for SO₂ will begin at feed addition.
4. This item is replaces 5 of the old text to reflect that temperature of the material stream is monitored during kiln startup for achieving normal production levels.
5. This item has been replaced 6 of the old text and estimates kiln start up time will be 24 hours after the successful introduction of feed to the kiln.

Kiln Shut down

2. The normal kiln rotation cool down schedule in the old text was removed because the cause for the shutdown may dictate an alternate rotation schedules.
3. Normal cooling of the kiln will follow the 24 hour preheat schedule guidelines but in order to accommodate other than normal shutdown requirements and conditions, accelerated and extended schedules should be allowed.